

WHAT IS CLAIMED IS:

1. A laser output device comprising:

an optical fiber;

5 a mirror configured to reflect light of a specific wavelength transmitting in the optical fiber to return the light to the optical fiber; and

a support portion configured to support an end surface of the optical fiber and the mirror in a state in which they are pressed against each other.

10 2. A laser output device according to claim 1, wherein the support portion fixes the optical fiber in such a way that tension which permits the end surface of the optical fiber to be pressed against the mirror is generated in the optical fiber itself in a state in
15 which the end surface of the optical fiber is in contact with the mirror.

3. A laser output device according to claim 1, wherein a laser active material is added to the optical fiber, and the mirror is a resonant mirror of an
20 upconversion fiber laser in which the optical fiber to which the laser active material is added is excited by employing laser light.

4. A laser output device according to claim 1, wherein the optical fiber is fixed in a ferule, and an
25 end surface of the ferule, together with the optical fiber, is polished.

5. A laser output device according to claim 1,

wherein the optical fiber is fixed in a ferule, and an end surface of the ferule, together with the optical fiber, is polished so as to have a predetermined curvature.

5 6. A laser output device according to claim 4 or 5, wherein the support portion presses the end surface of the optical fiber against the mirror by a bias force of a spring which is applied to the ferule.

10 7. A laser output device according to claim 1, wherein the support portion presses the mirror against the end surface of the optical fiber by a bias force of a spring which is applied to the mirror.

15 8. A laser output device according to claim 1, further comprising a modulation portion configured to perform spatial modulation for the light excited by the optical fiber based on a video signal.

 9. A laser output method comprising:
supporting an end surface of an optical fiber and a mirror which reflects light of a specific wavelength
20 transmitting in the optical fiber to return the light to the optical fiber in a state in which the end surface of the optical fiber and the mirror are pressed against each other.

25 10. A laser output method according to claim 9, further comprising:

performing spatial modulation for the light excited by the optical fiber based on a video signal.

11. A video display apparatus comprising:

a fiber laser device configured to support an end surface of an optical fiber and a mirror which reflects light of a specific wavelength transmitting in the optical fiber to return the light to the optical fiber in a state in which the end surface of the optical fiber and the mirror are pressed against each other;

a modulation portion configured to perform spatial modulation for the light to be outputted from the fiber laser device based on a video signal; and

a display portion configured to project and display light output obtained from the modulation section on a screen.

12. A video display apparatus according to claim 11, wherein the fiber laser devices and the modulation portions are disposed corresponding to R, G, B lights, respectively, and the display portion synthesizes light outputs from the respective modulation sections corresponding to the R, G, B lights to project synthesized light on the screen.

13. A video display apparatus according to claim 11, wherein the fiber laser devices are disposed corresponding to R, G, B lights, respectively, and the modulation portion performs spatial modulation for white light obtained by collecting output lights of the respective optical fibers corresponding to the R, G, B lights.